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TITLE : PHOTSENSITIVE CRYSTALLIZED GLASS HAVING LOW EXPANSION COEFFICIENT

ABSTRACT : PURPOSE: To provide a crystallized glass composed of a specific glass composition, having high meltability of the glass and excellent chemical machinability, i.e. large crystallization temperature difference between a part irradiated with ultraviolet ray and a non-irradiated part and giving a crystallized final product having a specific thermal expansion coefficient.

CONSTITUTION: The objective glass is composed of 55~70wt.% SiO₂, 8~12% Li₂O, 12~20% Al₂O₃, 0~3% Na₂O, 2~5% K₂O, 0~2% Cs₂O, 1~3% BaO and 0~4% ZnO and containing 0.001~0.03% CeO₂ and 0.05~0.1% Ag or 0.0005~0.02% Au as photosensitive components. The glass is sensitive to ultraviolet ray to effect the selective crystallization of the ultraviolet irradiated part by the heat-treatment at 500~600°C. The crystallized product produced by the heat-treatment at 800~900°C to precipitate fine crystals in the glass has a thermal expansion coefficient of 40~70×10⁻⁷/°C.

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